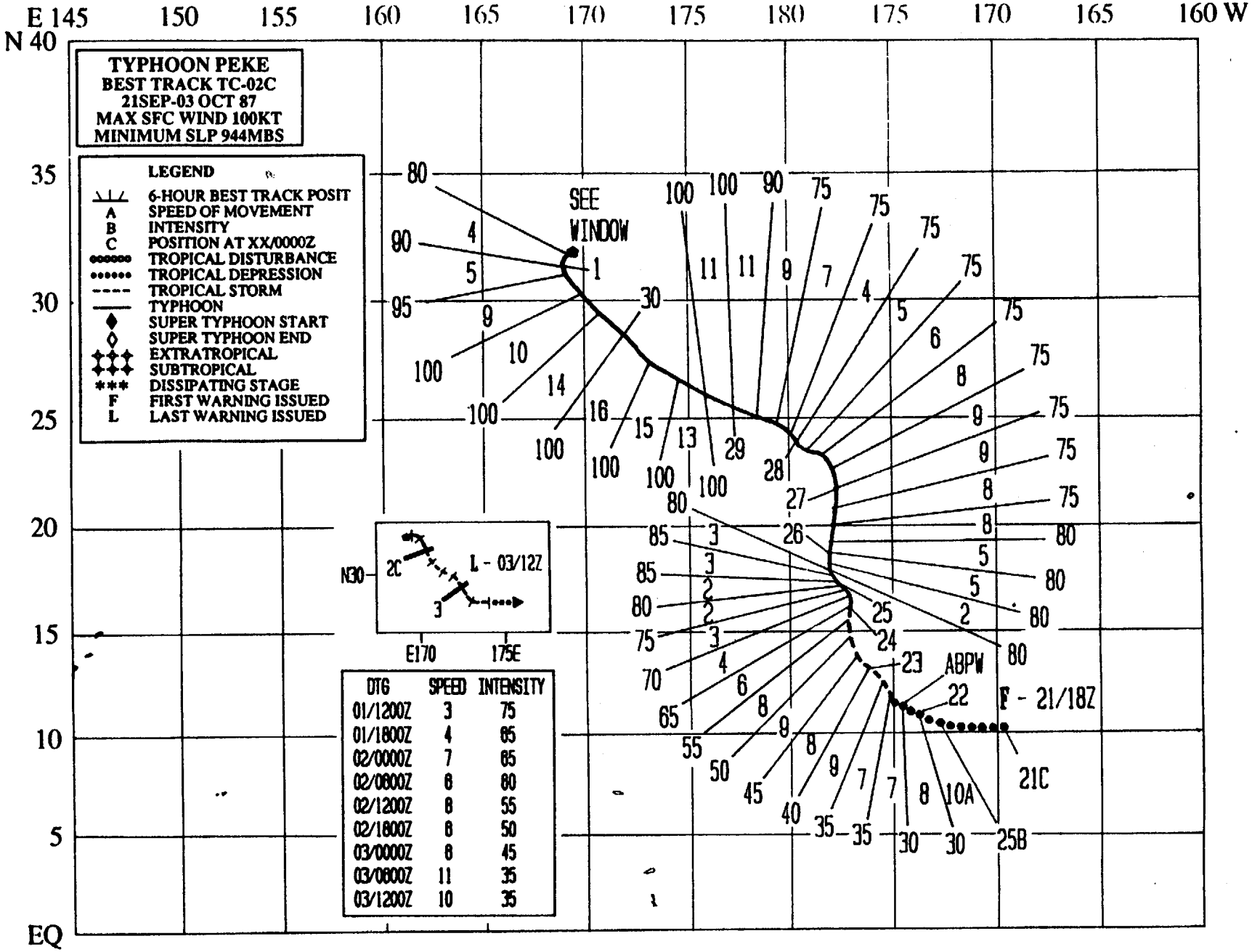
E 145
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EQ
TYPHOON PEKE
BEST TRACK TC-02C
21SEP-03 OCT 87
MAX SFC WIND 100KT
MINIMUM SLP 944MBS
LEGEND
6-HOUR BEST TRACK POSIT
A SPEED OF MOVEMENT
B INTENSITY
C POSITION AT XX/0000Z
TROPICAL DISTURBANCE
TROPICAL DEPRESSION
TROPICAL STORM
TYPHOON
SUPER TYPHOON START
SUPER TYPHOON END
EXTRATROPICAL
SUBTROPICAL
DISSIPATING STAGE
F FIRST WARNING ISSUED
L LAST WARNING ISSUED
SEE WINDOW
ABPW
F - 21/18Z
L - 03/12Z
21C
25B
N30
E170
175E
DTG SPEED INTENSITY
01/1200Z 3 75
01/1800Z 4 65
02/0000Z 7 65
02/0600Z 8 60
02/1200Z 8 55
02/1800Z 8 50
03/0000Z 8 45
03/0600Z 11 35
03/1200Z 10 35

TYPHOON PEKE (02C)

Typhoon Peke (02C) was the first hurricane during the past twenty years (since Typhoon Sara (28) in September 1967) to form in the central North Pacific and cross the dateline. Peke was the only significant tropical cyclone to cross the dateline north of the equator this year. The first twenty-five advisories were issued by the Central Pacific Hurricane Center (CPHC) in Honolulu, Hawaii (the Naval Western Oceanography Center at Pearl Harbor, Hawaii issued the corresponding warnings for the Department of Defense customers). The final twenty-three warnings were issued by JTWC.

Peke began as a broad area of convection about 480 nm (889 km) to the south-southeast of Johnston Island in the west central North Pacific on the 20th of September. The system tracked toward the west and increased in convection and organization over the next 24-hours. The upper-level outflow was initially restricted by an upper-level trough to the north of the system. The first advisory on Tropical Depression 02C was issued by CPHC at 211800Z. Satellite imagery indicated a low-level cyclonic circulation with spiral banding. This developed after the tropical cyclone had moved toward the west past the restricting influence of the upper-level trough to the north.

Over the next 18-hours, the amount of convection continued to increase. Upper-level outflow was unrestricted to the south and was becoming less restricted to the north, prompting the upgrade to Tropical Storm Peke (02C). During this time, Peke changed its track from westward to northwestward in response to a mid-level weakness in the subtropical ridge. It continued to intensify at a normal rate (Dvorak, 1984) and began to track more toward the north. CPHC upgraded the system to Hurricane Peke (02C) at 231800Z based on the formation of a banding-type eye, but Dvorak intensity post-analysis indicated that the system most probably did not reach hurricane intensity for another 6- to 12-hours. Peke continued to intensify and reached a first peak, of 85 kt (44 m/sec), at 250000Z.

Peke continued moving northward until 270600Z. After which time, it tracked toward the west-northwest in response to the strong mid-level flow around the subtropical ridge lying to the north of the system. CPHC issued their last advisory on Hurricane Peke (02C) at 271800Z September. It was approximately 30 nm (56 km) to the east of the dateline when JTWC issued its first warning (warning number 26) and redesignated the system as Typhoon Peke (02C) at 280000Z. Peke crossed the dateline at 280600Z. After having maintained a steady 75 kt (39 m/sec) intensity for over 36-hours, it began to re-intensify. Peke reached its second peak intensity (of 100 kt (51 m/sec)) between 290600Z and 291200Z, as upper-level outflow to the north improved.

Shortly afterward, JTWC was issuing warnings on three western North Pacific systems. Typhoon Ian (16W) was over 2000 nm (3704 km) to the west, and having little effect directly on Peke. About 1000 nm (1852 km) to the west of Peke, Tropical Storm June (18W) was beginning to organize (Figure 3-02C-1). Peke, together with Typhoon Ian (16W) and Tropical Storm June (18W), modified the environment and forced the subtropical ridge axis even further north to beyond 35 degrees North Latitude.

Earlier, as Peke crossed the dateline, it accelerated over a 48-hour period from near 7 kt (13 km/hr) forward speed to about 16 kt (30 km/hr). At that time, Peke began to entrain drier air into its central region. Satellite imagery at 291800Z indicated that a banding eye was present instead of an eye within a central dense overcast. Peke maintained its intensity and was still at 100 kt (51 m/sec) at 301200Z, when the system began to decelerate. At that time, recurvature was forecast along with rapid weakening due to strong westerly flow aloft. Peke became nearly quasi-stationary at 010600Z October, prior to recurvature. Within six hours, Peke was recurving toward the north-northeast and had steadily weakened from 100 kt (51 m/sec) at 301200Z September to 75 kt (39 m/sec) at 011200Z October. Over

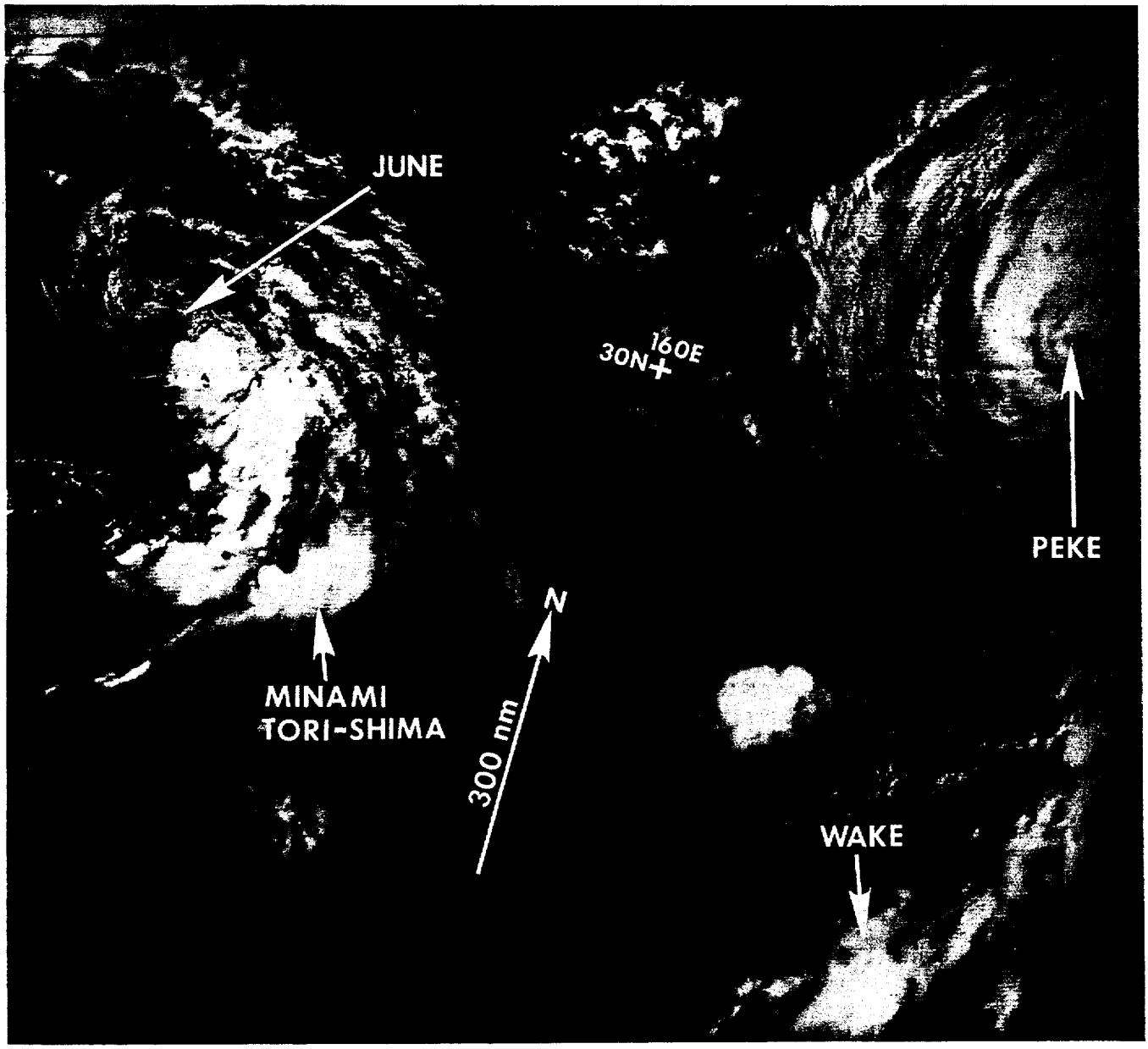

Figure 3-02C-1. Typhoon Peke (02C) with Tropical Storm June (18W) to the west (302243Z September DMSP infrared imagery).

the next day, Peke weakened even more, to 55 kt (28 m/sec), but instead of tracking toward the north-northeast, the low-level drifted toward the southeast, while the upper-level tracked toward the south-southeast in response to weak steering flow and increasing vertical wind shear. The last warning on Tropical Depression 02C was issued by JTWC at 031200Z. The remnants of Peke moved erratically over the next three and one half days in response to weak steering flow, first tracking toward the east, then toward the northwest and finally back toward the southeast until it could no longer be identified on satellite imagery.